Preparation of Cost Models, Metrics, and Return On Investments (ROI)

MS. Thelma Harrington Pers-32
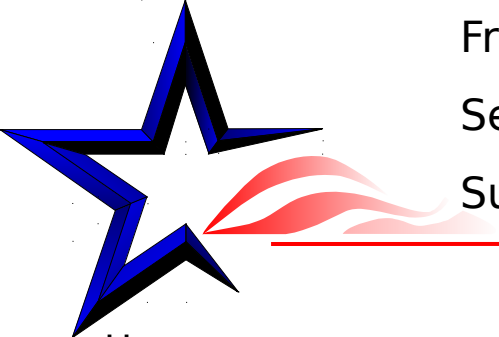## Mr. Gerald Socha Pers-323

Mission First... Sailors Always

Introduction

- Balanced Scorecard
- Preparation of Cost Models, Metrics, and Return On Investments (ROI)
  - Metrics
  - Costing Models
  - Return on Investments
- Program Review
  - Program Description
  - Background
  - Costing Methodology
  - Program Assessment
  - Alternatives
  - Return on Investment
- Summary

Here are some areas that I'd like all of us to focus additional attention on:

 *   Metrics - We need to focus on getting the right metrics to help us drive performance. During my visits I have seen volumes of measures and metrics. We need to ask ourselves what are those few salient things that, if really focused on, will dramatically improve our performance. We then need to determine how best to measure those areas and drive the desired behavior. The keys are determining the right metrics, benchmarking internally and externally, and then making the results visible. A valuable outcome of making results visible is the sense of competition that is created.

 *   ROI - This is an area where we are struggling the most.   We need to know that we are making the right type and level of investment. We have made some progress in understanding what we are investing in and have even made progress in understanding the output of our processes. However, we are struggling to link the two. We need to model how increases or decreases in investments (people, dollars, technology) will change the output. Every decision needs to be scrutinized in terms of cost and expected benefit.no return, no investment. And we need to start thinking about "benefits" differently.benefits should be evaluated in terms of meeting essential enterprise requirements.

 *   Innovation - I have been very impressed with the innovation and dedication of our people. We need to develop structures and processes that unleash the genius of our people. We need to make it easy for people at all level to get their ideas heard, evaluated and implemented as appropriate. Embracing and acting on ideas for improving performance or introducing efficiencies provides a strong motivation for our people to excel, and invest them more deeply in meeting organizational objectives.
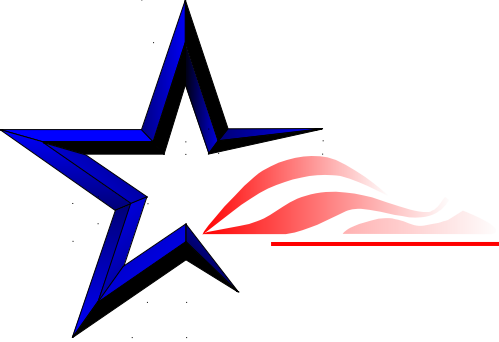
Mission First... Sailors Always

Admiral Says Navy Must Practice Fiscal Restraint

NORFOLK — Sent here to find ways to save money without cutting into the service's combat power, Adm. William J. "Fox" Fallon has earned a reputation as a "penny pincher" in his first year as the commander of fleet forces.

That's what has allowed him to find about $3 billion in potential savings for next fiscal year and possibly up to $15 billion in the next six years.   It will only come, Fallon has told the admirals responsible for the Navy's ships, submarines and airplanes, if they find yet more efficiencies in operations, even if it means taking risks.

"I told them to look at everything they did," Fallon said, "to examine procedures and routine activities, such as flying and steaming days, training activities, and the processes within the staffs."   To help reinforce the need for fiscal constraint at sea, he is sending ship captains and squadron skippers back to school. Through an eight-hour executive-level course, they're taught why it is important to shave fuel costs or end the purchase of needless spare parts.   "The object is to get people into the business of thinking about the cost of operating," he said. "In the fleet, the mindset has been historically to 'Give us a mission and we will execute it and let somebody else worry about the cost,' " he said. "But we have to consider the cost."   He wants his leadership to make the changes at the waterfront, instead of having them made in Washington where politics and bureaucracies have traditionally dictated the fleet's course.

"This is a tough go because it is a huge culture change for the institution," Fallon said. Fallon, who acknowledges his reputation as what he calls "a penny-pincher," said the Navy's $115 billion budget "is a sum I just can't quite fathom." "We clearly ought to be able to operate this fleet and continue to recapitalize, given that amount of money," he said. Fallon, a career aviator who previously was the Navy's vice chief of operations, was sent by the Navy's Washington leadership to the fleet forces post to strengthen the fleet's voice in

N-MAPS (Balanced Score Card Initiative)

Balanced Score Card

What Does the BSC Do For Us?

- Strategic Management & Measurement Strategy

- Provides Balanced Perspectives Among:

  - Financial and Other Objectives

  - Desired Outcomes, Strategies and Measures of Related Performance Drivers

- Focuses Managers and Employees On Strategic Objectives (N1 Priorities!)
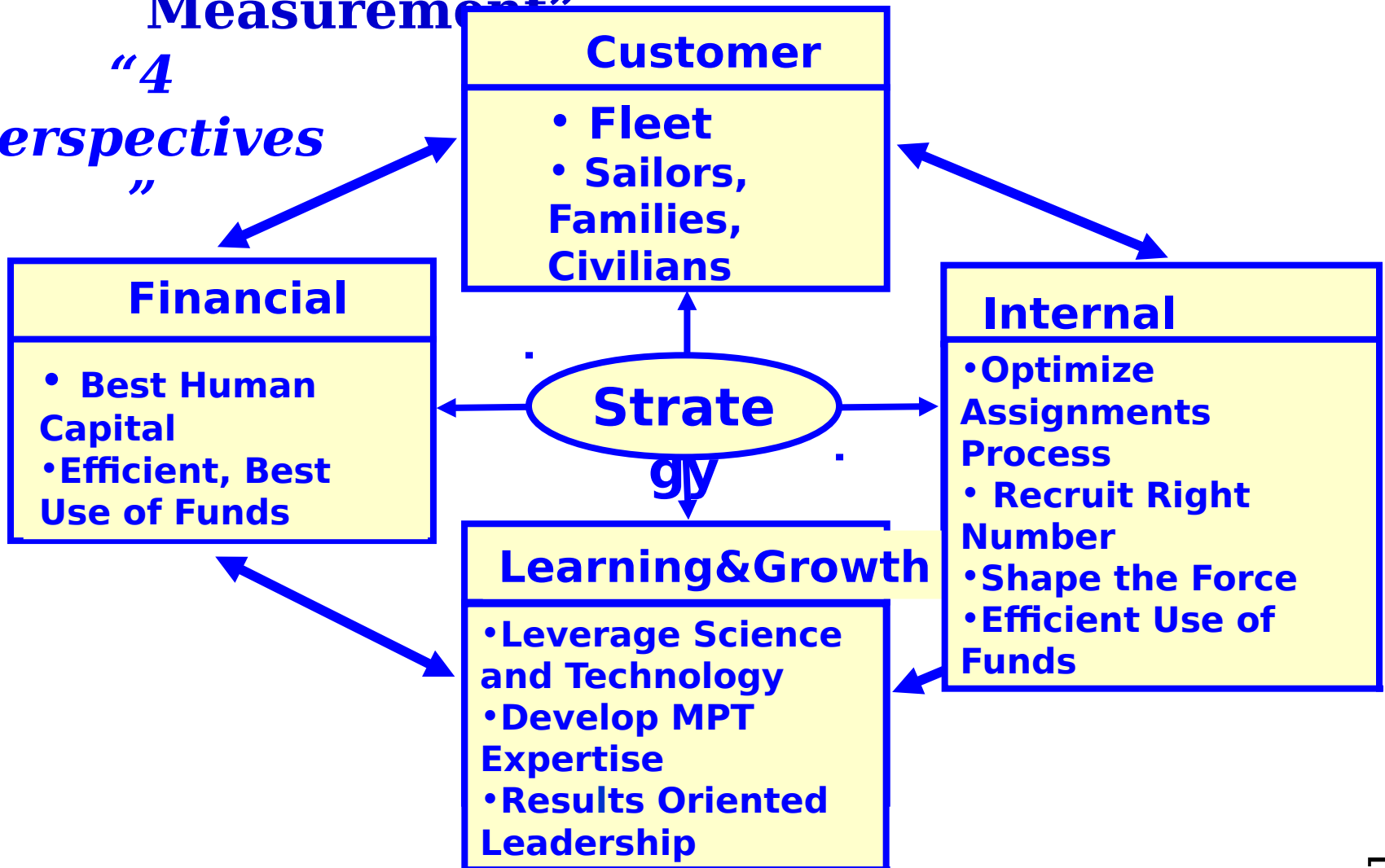
- Links Resource Allocation To Strategy

Mission First... Sailors Always

Balanced Score Card

The Scorecard "Balanced Measurement"

"4 Perspectives"

Customer
- Fleet
- Sailors, Families, Civilians

Financial
- Best Human Capital
- Efficient, Best Use of Funds

Internal
- Optimize Assignments Process
- Recruit Right Number
- Shape the Force
- Efficient Use of Funds

Learning&Growth
- Leverage Science and Technology
- Develop MPT Expertise
- Results Oriented Leadership

Strategy

Navy Manpower and Personnel N-MAPS Strategy Map

Navy HR Strategy: Mission First ... Sailors Always

Customer

The Fleet

C1
Fit/Fill

Sailors, Families, Civilians

C2
Retention
Sailor
Satisfaction

Financial Resources

F1
Cost of
Producing
Fit/Fill,
Retention, Sailor
Satisfaction

Financial

Internal & External Processes

TOTAL VISIBILITY

IP1
Create
rational
total force
demand
signals

IP2
Shape the
force for
max
readiness

IP3
Recruit
right
number
and kind

EP4
Optimize
training
process

IP5
Optimize
assignment
process

IP6
Optimize
HR
services
for
personal
readiness

SEA WARRIOR

World-class, total force
human capital development
and management system

Learning & Growth

LG1
Human Capital
Portfolio

LG2
Research &
Development
Portfolio

LG3
Leverage IT
Portfolio for N1
Enterprise

Business Operations Department
N-MAPS Strategy Map

Customer

Financial

CM / FS Pillars, BUPERS, External Navy

Provide Timely and Accurate Services

Execute Programs at the Right Cost

Internal Processes

Optimize Records Management

Provide Timely Response to Congressional, BCNR and Legislative Queries

Optimize IT/IM at NPC

Analyze BOD Workforce to Maximize Value

Streamline Financial Processes at NPC

Learning & Growth

Enhance Human Capital Skill Sets

Improve Strategic Technologies

Mission First... Sailors Always

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BOD N-MAPS Objectives Definitions

Provide Timely and Accurate Services – Optimize service support for BUPERS, Pillars, and External Nav Establish BOD Service Level Agreements for *Finance*, *Human Resources*, *Administration,* and *Informat*

Execute Programs at the Right Cost – Monitor obligation/expenditure rates relative to program phasing Performance Modeling to justify budget requirements. Perform ongoing Program of Record analysis.

Optimize Records Management – Enhance Selection Board Participant support and responsiveness to c

Analyze BOD Workforce to Maximize Value – Optimize Manpower Alignment to core workload requirem

Optimize IT/IM at NPC – Provide optimum legacy system support. Document functional system require standardized IT Project Management support.

Streamline Financial Process at NPC – Streamline planning, budgeting and execution processes, identi for consolidation/reduction and increase use of automated tools (i.e. Budget Builder).

Provide Timely Response to Congressional, BCNR and Legislative Queries – Optimize Quality of Service to Congressional Inquiries, timely completion of BCNR Record Change Actions, and timely response to (Advisory Actions).

Enhance Human Capital Skill Sets – Expand Specialized Skills Knowledge of Financial Management per Specialists through advanced training. Reduce skill gaps through job specific skills training for all BO

Improve Strategic Technologies – Enhance business processes through the deployment of advanced ted applications (EMPRS Refresh/Web enabled FITREP).

If you do not measure it, you can not manage it!

# Preparation of Metrics, Cost Models, and Return On Investments (ROI)
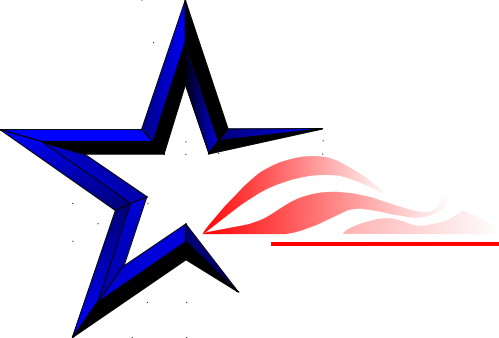
Metrics

Metrics

Types of Metrics

- Performance – typically high level measures of mission accomplishment, efficiency, return/value, etc…primarily for leadership use internally and externally.

- Diagnostic/Process – typically internal focus only, seek to ascertain effectiveness of processes. Diagnostic metrics may be rolled up to function as performance metrics where applicable.
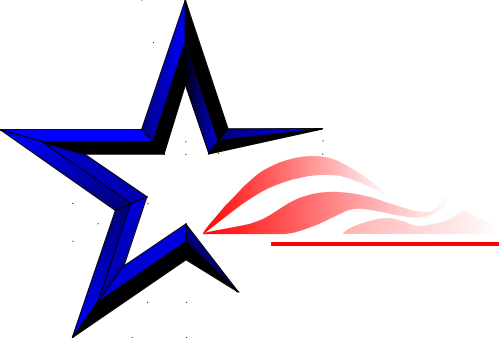
Metrics (cont.)

"Good" metrics should have the following attributes

- Actionable – Metrics should provide the organization with specific indications of issues and steer leadership towards corrective action (e.g. should help identify the root sources of issues.)

- Timely – do not want to end up measuring a lagging indicator

- Feasible – e.g. we can get/measure the data and the cost (opportunity or otherwise) of doing so is relatively small

- Focused – metrics developed should relate directly to the outcome/system they are to measure.

- Controllable – if we can't control/influence the inputs to a metric, it is by definition not actionable (not to say that there aren't things we should track as useful info)

1

How do we develop and implement

Step 1.

Identify (and eventually prioritize) desired outcomes (e.g. Satisfy customer needs, fiscal efficiency, increase value of product/service etc…). Obviously, this step is easier said than done. It involves synthesizing all the various customer requirements with CNP/NPC missions (goals & objectives) and constraints.

Step 2.

Identify candidate metrics linked to the outcomes in step one. As discussed previously, these metrics should be controllable at the NPC level.

Step 3.

Assign correlations between the metrics and outcomes (e.g. a high correlation if decisions and actions which improve the metric also improve the outcome.)

Step 4.

Prioritize outcomes in terms of mission/organization importance.

Step 5.
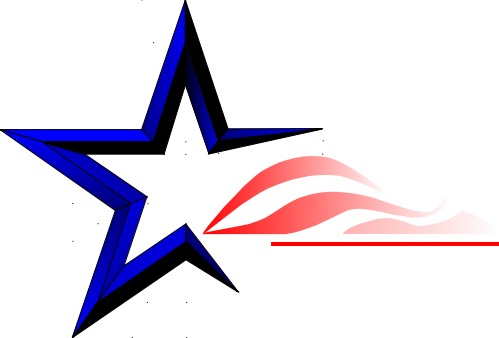
Example of a metrics Template

Year	Type Actions	Number of actions accomplished	Cost	Average Cost

Note:
Category titles can be changed to reflect what you are specifically measuring with your metrics.
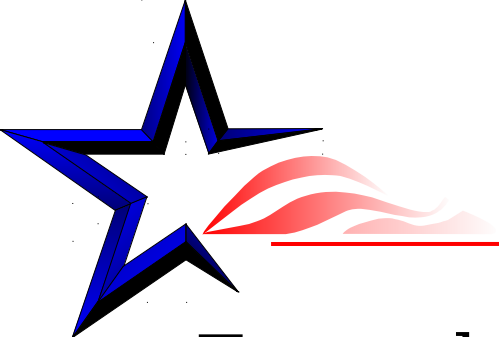
Metrics (cont.)

Example of TEMDUINS
Metrics

Fiscal Year	Expended Move Count	Authority Obligations	Average Exp Rate
FY04*	20,393	$36,880,646	$1,808
FY03	30,481	$49,757,698	$1,632
FY02	30,159	$50,633,011	$1,679
FY01	28,740	$42,437,000	$1,477
FY00	27,256	$37,010,000	$1,358
FY99	29,209	$38,166,000	$1,307

*Current Program of Record (POR), estimated calculations

Costing Model
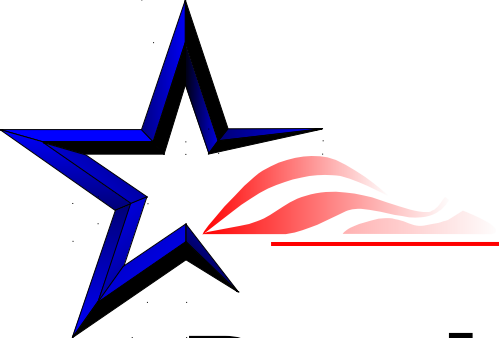
Costing Model

Developing a Costing Model

Example of a Costing Model

Business Process	Resources	Period of Time	Average Expense	Total Cost of Deliverables	Process Cost
Number and Type of Key Business Process/Action	Number/Type/ Unit Cost of Resources	Min, Hrs, Days, etc.	Average quantity produced/served/ payments made	Total cost of deliverables/ total produced	Average Cost of Each Process

Note:

Category titles can be changed to reflect what specific variables are included your costing model.

Questions:

What Does Your Program Do?	How Much Does it Cost?	What is the Unit Cost?	What is the Total Cost?	How much is produced
Key Business Processes Or Actions	**Cost Of All Associated Resources**	**Expense Per Business Process Unit**	**Total Expense Of Business Process**	**Total Output Of Business Process**
Write Orders Provide Childcare	► Labor Cost ► Training Cost ► Travel Cost ► Etc.	► Annual Unit Cost	► Total Annual Cost	►Orders Written ►# Children Cared For
► Total Orders Written per Year	► Total Labor Cost per Year	► Annual Cost per Order Written	► Total Cost of all Orders Year Written	
► Number Children Supervised per Year	► Total Training Cost per Year ► Etc.	► Annual Cost per Child Supervised	► Total Cost of all Children Supervised	

DATA

EXAMPLE

SAMPLE METRIC
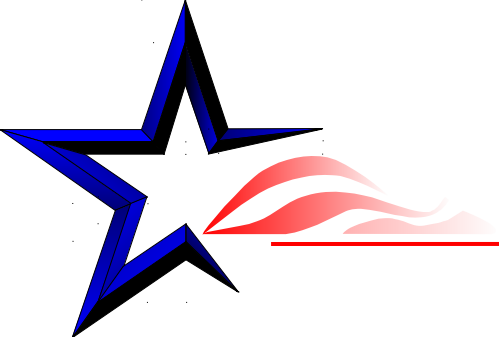
Costing Model (cont.)

Example of TEMDUINS of Model:

FY06 Submission Based on PCSVC Costing Data:

	TEMDUINS	COUNTS	DAILY RATE	# DAYS	AVG EXP	TOTAL COST	
27%	Officers	9,450	61.49	40	2,460	23,243,220	
73%	Enlisted	25,550	34.98	49	1,714	43,793,211	
	Total Moves	35,000			1,915	67,025,000	Required Funding
						38,902,000	Available Funding
						28,123,000	Unfunded

The following are explanations of variables used in the model:
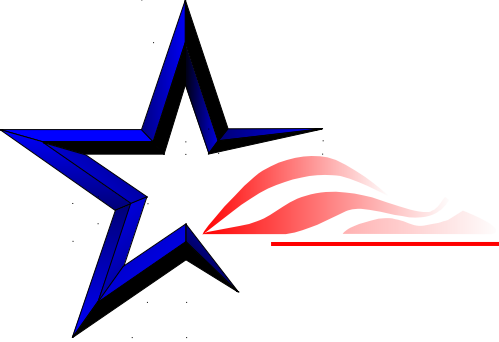
MOVE COUNTS: There is a percentage split between officer and enlisted moves. This is displayed in the left margin of the model. The historic split is 27%/73%. The overall move count is based on projected Operational, Rotational, and Training PCS readiness move projections.

DAILY RATE: Daily rate is defined as the "average daily per diem cost".

The Daily Rate is comprised primarily of lodging (on-base quarters, off-base in hotels), meals and incidentals

AVERAGE EXPENDITURES – synonymous with average move cost.

Return on Investment

Return on Investment (ROI)

- **Quantitative** **measures** of performance/effectiveness. Show how performance will improve (how much faster, how many labor hours saved, how will this reduce dissatisfaction).

- For non-monetary benefits, if private sector studies, research and analysis are available that lends weight to the service or product your program provides, use this information in your ROI.

   Example: Document the number of military personnel using recreational facilities (i.e. exercise facilities) then tie in private sector research that addresses the benefits of health and wellness program. Apply the percentages provided in those studies to the number of personnel using the facility to get a specific ROI.
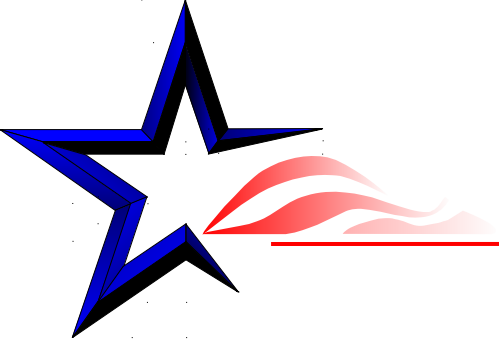
Program Review
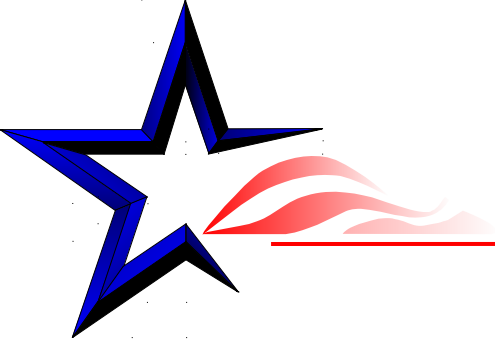
Program Review

- Submission Guidelines
  - Program Description
  - Background
  - Costing Methodology
  - Program Assessment
  - Alternatives
  - Return on Investment

Program Description

Program Review

Program Description

- Provide a detail description of what your program/activities does; include mission statement with goals and objectives.

- State who you support, who are your customers and or, beneficiaries (e.g. Sailors, families, commands), and why do you perform the service you do.

- If your program/activity is IT related, ensure your description is such that a non-technical individual will have no difficulty in understanding.

- When describing your program, spell out all acronyms.
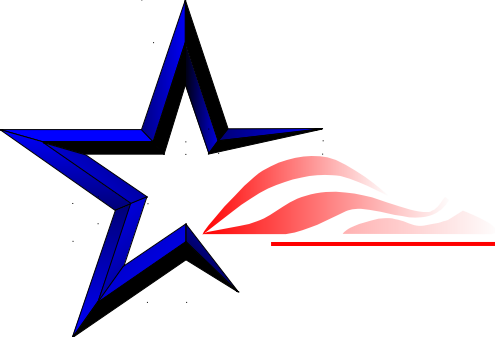
Program Description (cont.)

Then year $M	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Program of Record (1 Oct 2003)								
Program Requirement (Full Funding Alternative)								
Requirement DELTA								
Alternative One (Less Than Full Funding Alternative)								
Alternative One DELTA								
Alternative Two (Less Than Full Funding Alternative)								
Alternative Two DELTA								
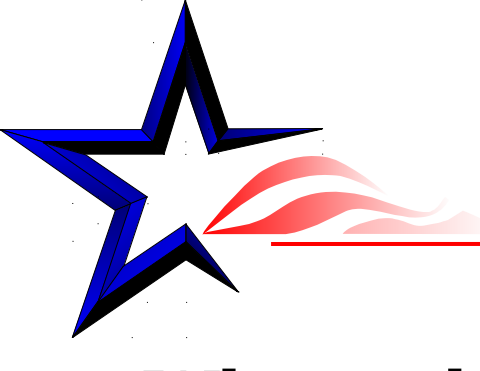
Program Type: ☐   **Level-of-Effort** ☐   **Performance Me**
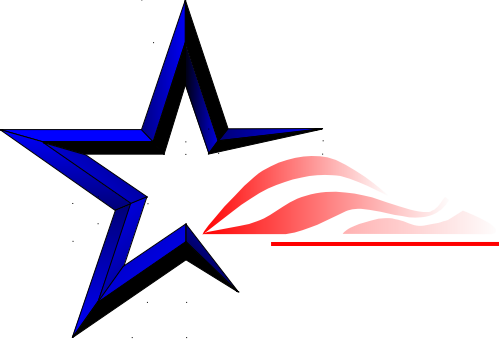
Program Review

Background

Program Review

Background

- What role does your issue play in overall Navy M&P strategy? Discuss connection to CNO's Strategic Objectives, CNP's Top Initiatives, DCNP/NPC Top Priorities, and/or Navy IT Strategic Objectives

CNO's Strategic Objectives

- Win the Global War on Terrorism
- Improve Readiness for global response
- Integrate Sea Strike, Sea Shield, and Sea Basing into the Joint Force
- Capture funds through Sea Enterprise to build a 375 ship Navy
- Develop the 21st century workforce
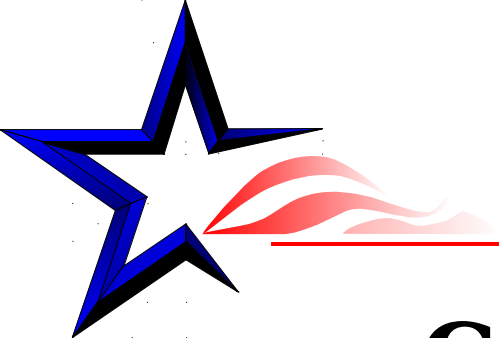
CNP's Top Initiatives

- Total Force Career Management
- Sea Warrior
- Total Force Manpower Requirements
- Force Shaping
- IM/IT Systems Migration

DCNP/NPC's Top Priorities

- Sea Warrior Integrated Delivery and Implementation

- N1 Legacy IT Migration

- Manning to Fleet Response Plan (FRP) Requirements /Alternative Manning Strategies / PCS and TEMDUINS

- Execution (Balanced Scorecard, metrics, resource alignment/realignment, execution discipline

- Customer Relationship Mgmt (Integrating HR customer service, call center, web content mgmt, PASS/PAPA self-service, surveys, comms)

Mission First… Sailors Always

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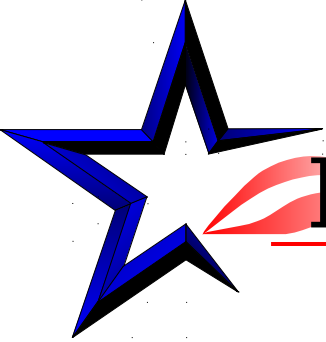
Business Operations Top Priorities

- Stand Up Shared Services at NPC (FM, Manpower/HR, IT, and Other Staff Functions

- Prototype Activity Based Analysis for Shared Service Functions….All Business Lines Next Step

- Re-engineer Processes Through Standardization and Selective Technology to Increase Efficiencies

- Implement Balanced Scorecard

- Align Budget Process to BSC Strategic

- State precisely what requested funding is to be used for (manpower, travel, contracts, equipment, etc.) .

- Environmental Factors contributing to program deficiency (Must funds/Bogey, unrealized savings, skunk works, IT transformational, experimentation, recapitalization, workload validation, PBD/PDM directives, budget marks, etc.). Additional impacts; New Congressional Mandate, Navy Policy, new business requirement, obsolete equipment (software, hardware), unable to get NMCI certification.

Program Review

Background (cont.)

- Was this a Sailor and requirement in previous years?

- Provide any supporting evidence or letters to justify an increase requirement across the FYDP.

- If there was no POR funding in previous years, state how the program/activity was funded.
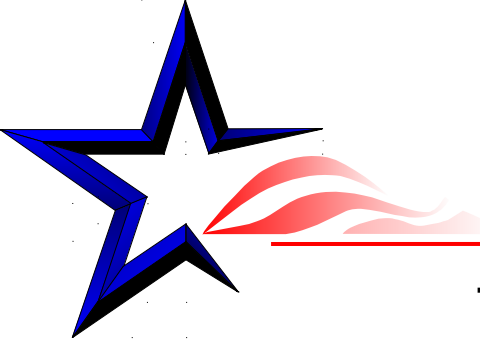
Program Review
Background (cont.)

- If the program requirement is a modernization of a current process, provide an explanation of the old process.

- Explain any significant changes to your funding profile from one fiscal year to the next. Are there any one-time increases or decreases? If so, provide details (e.g. effort, funding, value, FY).

Costing Methodology

Program Review

Costing Methodology

- Address in terms of percentage how successful you are at achieving your stated goals. If your goals are currently being met, why is there an increase requirement to your program.

- Specifically list what you are obligating your funding on (manpower, space, equipment, contracts, travel, etc.) and then describe in detail (type, quantity, length, unit cost, total cost) precisely what you are procuring.

Costing Methodology (cont.)

- Describe the rationale, assumptions and methodology used in costing the Program Requirement.

  - How did you calculate your funding requirements.

  - If you used a formal costing model, what model did you use?

  - Where possible develop a model and provide a description and definition of the variables used in the model.

Costing Methodology (cont.)

- **Examples:**

  Contracts - provide specific type of services procured, type of skill sets (what position does), number of hours for each skill set (work years), hourly rate, total cost of each work year, etc. Following are a sample of contracts:
  - Advisory and Assistance Services (Management and professional support services, studies, analyses, and evaluations, engineering and technical services, etc.)
  - Operation and maintenance of facilities
  - Research and Development
  - Operation and maintenance of equipment

  Equipment - type of equipment, quantity, unit
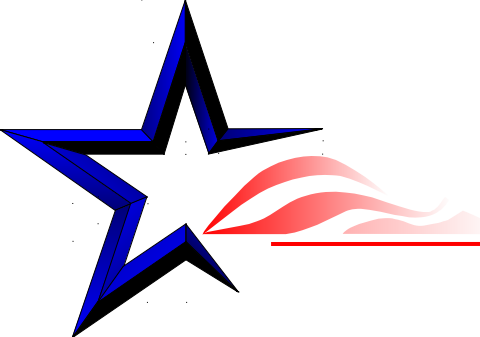
Costing Methodology (cont.)

RESOURCE MATRIX (Profile of POR & Unfundeds)
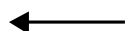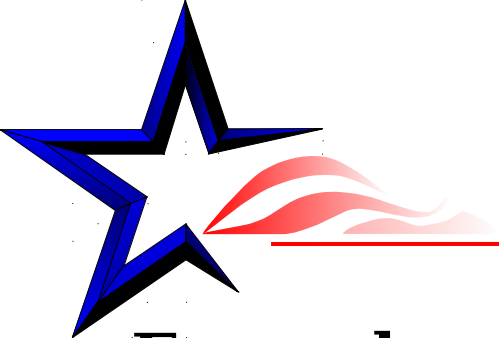
← ANNUAL TOTAL COST →
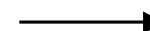
RESOURCE CATEGORY	Type / Title	Qty / Total Hrs	Unit Cost	FY02	FY03	FY04	FY05	RESOURCE CATEGORY	Type / Title	Qty / Total Hrs	Unit Cost	FY06
Civilian Labor								Civilian Labor				
Contract Labor								Contract Labor				
NMCI								NMCI				
Travel								Travel				
Training								Training				
Equipment								Equipment				
Supplies								Supplies				
etc.								etc.				
TOTAL				$0	$0	$0	$0	TOTAL				$0

Notes
① Insert additional resource categories as necessary.
② Large or multi-faceted cost-drivers such as labor and contracts should be
③ Total cost per fiscal year for all business processes should add to Program
④ "Qty/Hrs" in man-years for labor and contracts (optional).
⑤ "Type/Title" further defines resource category (optional).

Notes
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③ Total cost per fiscal year for all business processes should add to
④ "Qty/Hrs" in man-years for labor and contracts (optional).
⑤ "Type/Title" further defines resource category (optional).

Costing Methodology

Example of TEMDUINS Resource Matrix:

RESOURCE MATRIX (Profile of POR & Unfundeds)

← ANNUAL TOTAL COST →

RESOURCE CATEGORY	Type / Title	Qty / Total Hrs	Unit Cost	FY01	FY02	FY03	FY04	RESOURCE CATEGORY	Type / Title	Qty / Total Hrs	Unit Cost	FY05
Civilian Labor								Civilian Labor				
Contract Labor								Contract Labor				
Travel	Move Count	20,393	$1,808				$36,870,544	Travel	Move Count	35,000	$1,915	$67,025,000
Training								Training				
Equipment								Equipment				
Supplies								Supplies				
etc.								etc.				
TOTAL				$0	$0	$0	$36,870,544	TOTAL				$67,025,000

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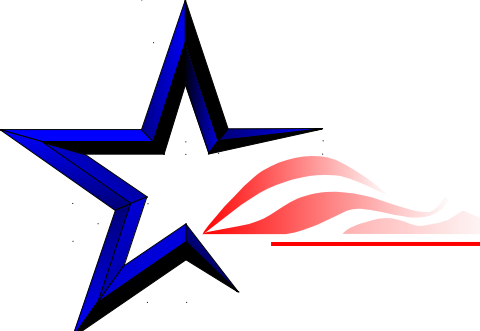⑤ "Type/Title" further defines resource category (optional).

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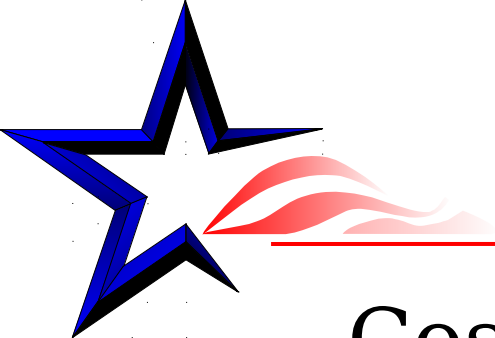
Costing Methodology (cont.)

Developing a Costing Model

| Business Process	Resources	Period of Time	Average Expense	Total Cost of Deliverables	Process Cost
Number and Type of Key Business Process/Action	Number/Type/ Unit Cost of Resources	Min, Hrs, Days, etc.	Average quantity produced/served/ payments made	Total cost of deliverables/ total produced	Average Cost of Each Process

Costing Methodology (cont.)

- If you are requesting manpower, state whether your end strength requirement has been validated and precisely what the job description is for each position.

Bottom Line

- **Make sure all of your planned expenditures are included in your costing methodology and that you specifically define what you are procuring.**
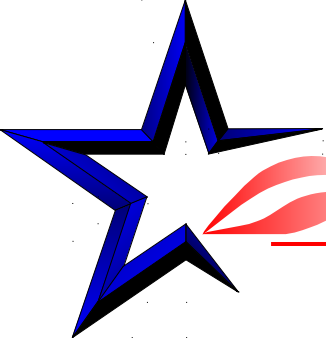
Program Review

Program Assessment

Program Review

Program Assessment

- Provide rationale for funding to meet the full program requirement. What will you accomplish with the funding?

- Provide sources of information for reporting metrics. How did you get your metrics data (research at site, surveys, hire contractor to provide, industry benchmark, etc.)?

- Provide performance measurements with definition and formula(s), output or outcome goals (capabilities based) with target dates for program requirement. Show how performance will improve (how much faster, how many labor hours saved, etc.)
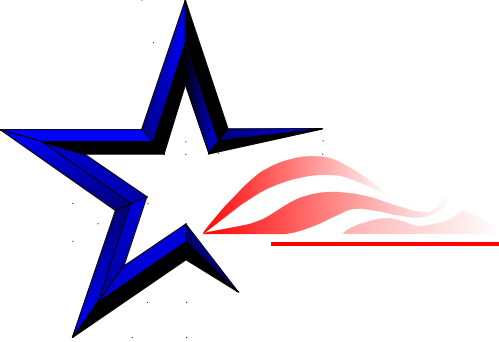
Program Assessment (cont.)

Metrics Template

Year	Actions taken	Number of actions accomplished	Cost	Average Cost

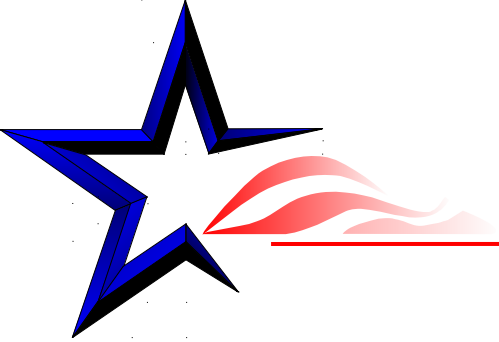# Program Assessment (cont.)

- Provide metrics and capabilities associated with this program and how they will change as a consequence of funding to the full program requirement (low risk). Metrics are quantitative measures of performance/effectiveness (units provided/produce, number of customers serviced, process times, hours of services, unit costs ect.). Are your average unit costs (in performance criteria) consistent from year to year? If not, explain.
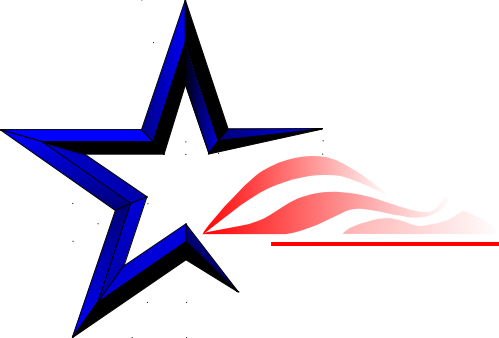
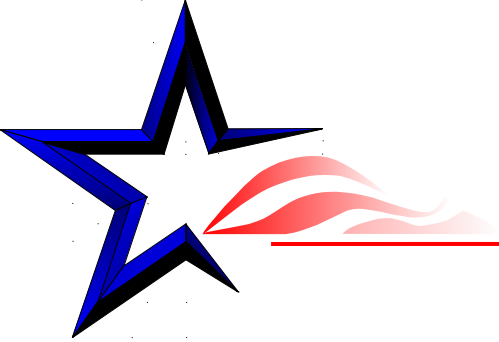# Program Review

Alternatives

Program Review

Alternatives

- Provide corresponding *funding* alternatives, short of funding to the full requirement for your program/activity, along with associated cost.

- Address how metrics and capabilities will change as a consequence of alternative funding levels.

- Are there alternative sources (other government or private entities) which currently do what you are doing and at what cost (use benchmarks if available)?
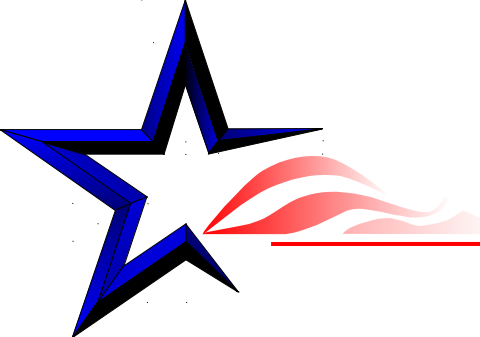
Risk Assessment

Risk Assessment

- Discuss impacts of funding/not funding the Program Requirement and Alternatives. Characterize risk as based upon the impact on metrics/capabilities.

- What are you unable to do as a result of the deficiencies? Provide a good justification for the risk. What were the numbers before and what are the numbers now?

- What does the current POR support (across the FYDP)?

- Assess risk as low, medium, or high

Risk Assessment (cont.)

- Assess risk as low, medium, or high: "Risk is defined as follows"

  - Low (green): Program of Record (POR) is adequate or has excess capacity, and may be considered for potential offsets.

  - Moderate (yellow): Action required to increase size/scope of program.

  - High (red): Program is not sustainable at current level of funding or manning. FY-06 issue OR cannot be delayed until next cycle. May include fact-of-life pricing shortfall."
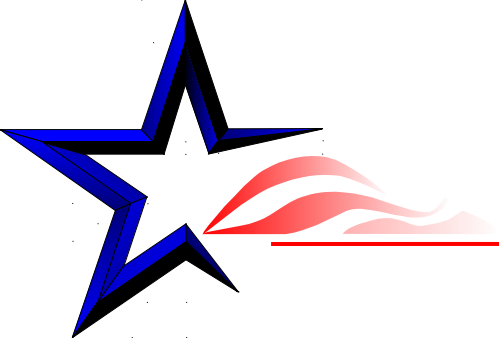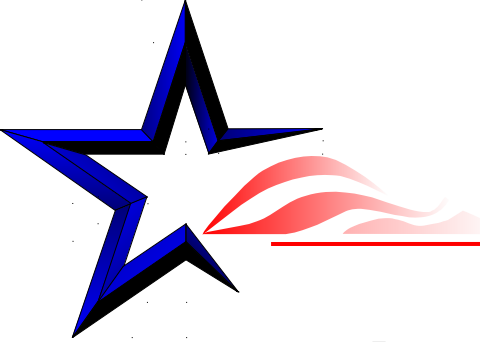
Return on Investment (ROI)

Return on Investment (ROI)

- Provide ROI/offsets if possible, even if they fall outside the program of record. Productivity enhancement, improved service levels, reduced cycle time. Use **quantitative** **measures** of performance/effectiveness. Show how performance will improve (how much faster, how many labor hours saved, how will this reduce dissatisfaction).

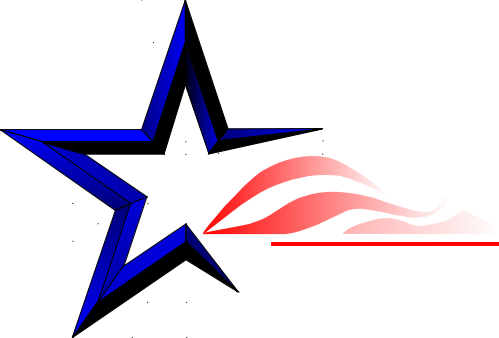- Explain the relationship between performance and benefits to DON.

Return on Investment (ROI) (cont.)

- For non-monetary benefits, if private sector studies, research and analysis are available that lends weight to the service or product your program provides, use this information in your ROI.

    Example: Document the number of military personnel using recreational facilities (i.e. exercise facilities) then tie in private sector research that addresses the benefits of health and wellness program. Apply the percentages provided in those studies to the number of personnel using the facility to get a specific ROI.

- Address impact of offsets.

Summary

- **Use the Balance Scorecard (BSC) to assess your program/activity**

- **Build valid metrics**

- **Develop Costing Models or Costing Methodology**

- **Determine ROI and where possible, provide quantifiable support data (using metrics, benchmarking, etc.)**

- **Construct Program Review Paper including all of the above**